FIELD-READY

STARGATE

18

User Manual

Z Microsystems

Regulatory

FCC INFORMATION

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED AC PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS ALL THREE PRONGS CAN BE FULLY INSERTED.

STARGATE

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1. Use the power and video cables supplied with this equipment to help prevent interference with radio and television reception. The use of cables and adapters may cause interference with electronic equipment in the vicinity of this unit.
2. This equipment has been tested and found to comply with the limits for Class "A" digital devices, pursuant to certain limits imposed by Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in when equipment is operated in commercial environments. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
3. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Z Microsystems could void user's authority to operate the equipment

CAUTION

RISK OF ELECTRIC SHOCK – DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK OF UNIT). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

This symbol warns the user that insulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore it should be read carefully in order to avoid any problems.

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Starting Point

Congratulations on selecting a rugged field-ready StarGate -- the ultra rugged flat display.

SHIPMENT CONTENTS

The StarGate shipping box contains the following:

- The StarGate
- AC Power Cable
- User Manual

Remember to save your original shipping container and packing material to transport or ship the unit.

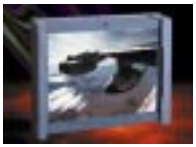
USER MANUAL

The User Manual comes in two formats: printed hardcopy or CD-ROM. This Manual is also available on the Z Microsystems website (www.zmicro.com).

We recommend you read this manual as follows:

Carefully follow the instructions in the Installation chapter for hookup and initial control settings. Refer to the Operation chapter for a complete description of all the user controls, and the Maintenance and Troubleshooting chapters for care and correcting any unforeseen problems with the system. The Appendix chapters are provided for quickly finding technical information about the unit.

PRODUCT DESCRIPTION



The rugged lightweight StarGate offers MIL-tailored high-end liquid crystal displays (LCD's) that can adapt to specific needs.

Dual locks hold the StarGate firmly in the viewing position.

Quick release levers allow it to swing open.

The StarGate can be opened all the way for access to storage items and other sensitive equipment.

A StarGate is built to easily withstand harsh environmental conditions. Automatic Phase Adjust functions lock to drifting graphic generator clocks and the Triple Frame Buffer allows a wide range of input signal refresh rates.

The StarGate is only 2.5" deep and 15.75" (9U) in height. It attaches to the front of RETMA rails in standard 19" racks and transit cases and requires no space inside the rack. Dual locks hold the StarGate firmly in the viewing position. Quick release levers allow it to swing open for access to storage items and other sensitive equipment behind.

With special airborne and shipboard extended shock vibration and shock specifications, the StarGate will stand up to the most extreme environmental conditions.

Available in 16", 17", 18" and 20" active display areas, featuring up to 1280 x 1024 pixel resolution. StarGate displays plug-and-play with any workstation, PC or X-Terminal and with active-matrix LCD technology it provides astounding color and clarity.

Fully sealed in a lightweight aluminum enclosure, the StarGate target application platforms include airplanes, helicopters, surface ships, submarines, vehicles and mobile shelters.

The StarGate features a user replaceable safety glass protective lens, front control panel, and low power usage extends the life of the display.

Also, radiation protection is designed into the system to make it less susceptible to electromagnetic interference.

TOOLS REQUIRED

WARNING: To avoid shock hazard:

- *Do not connect or disconnect the unit during an electrical storm.*
- *The power cord plug must be connected to a properly wired and grounded power outlet.*
- *Any equipment to which the unit will be attached must also be connected to properly wired and grounded power outlets*
- *The socket outlet shall be installed near the equipment and shall be easily accessible.*

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Required Tools and Equipment

- Phillips screwdriver with about 10" shaft.

PRECAUTIONS

NOTE: For the fastest and easiest installation of the StarGate, follow these steps in the sequence they are presented.

In preparation to install the StarGate, take the following precautionary steps:

Verify the StarGate power switch is off. If the power is off, the light on the front panel will not be illuminated.

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It is worth getting oriented to the StarGate before mounting it in the rack.

The StarGate is a flat LCD that mounts on the front of the RETMA rails of a standard 19" rack.

The dual locks can be seen on the vertical handle to the left. The display controls are located on the bottom below the display.

On the right side of the back is the on/off switch, with the receptacle for the AC power cord on the power supply on the bottom.

On the center left side of the back is the mini din receptacle for the power plug for the cord that leads from the power supply to the display. Also, the video connector.

Using both hands, press and slide the lock releases inside the handle on the left side of the display towards each other to release the locks and allow you to swing open the StarGate.

The StarGate display swings out to the right. The bracket that mounts to the front of the RETMA rails is on the left.

On the top and bottom of the mounting bracket is the receptacle for securing the display flat against the rack.

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Install StarGate

It is important to use the proper screws.

To secure the StarGate to the frame, use four Panhead Phillips screws and washers on each side, for a total of eight.

NOTE: All four screw holes in the RETMA rail must be visible through the four screw holes on both sides of the StarGate. If not, move the StarGate up or down until all four holes are visible.

NOTE: Installing the StarGate requires two people, one to hold the unit, while the other secures the unit with screws.

One person hold the right side of the StarGate, while the other person secures the first screw in the upper left corner of the unit.

Before using any additional screws, check to see that all the remaining seven holes in the StarGate line up with the screw holes in the RETMA rails.

Then secure the remaining seven screws. Do NOT tighten the screws.

Test the fit by opening and closing the StarGate several times.

For a final adjustment, make sure that the back plate is flush against the RETMA rail and the back plate is square to the RETMA rails.

Once positioned, tighten down the screws.

Test the adjustment by opening and closing the StarGate display several times.

If there is any binding, check for alignment and repeat the previous step.

Protector Removal

The display protective lens is intended to protect the surface of the screen from damage while in transit or during storage. The protective lens is not intended to be used while the StarGate is in operation, but can be used.

Make sure the StarGate is in the closed position.

Move the protective lens release catch (located above the display) up.

While holding up the release catch, slide the protective lens to the left or right.

Slide the protective lens off the edge of the display.

To reinstall the display protector during long storage or shipping, just reverse this process.

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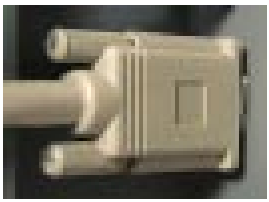
Connecting Cables

Connect the AC power cable on the right back side of the StarGate to AC power outlet. The socket outlet shall be installed near the equipment and shall be easily accessible.

Connect the power cable on the left back side of the StarGate to the power supply. Be sure the flat part of the connector is facing the back of the StarGate.

Connect the power cable from the power supply to the StarGate display. Be sure the flat part of the connector is facing the back of the StarGate.



Connect the video plug to the outlet on the left side of the StarGate back.

The completed connections should include input power, the converted power supply to the display back and the video input.

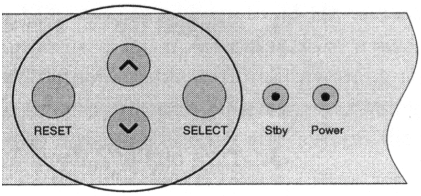
Power Up

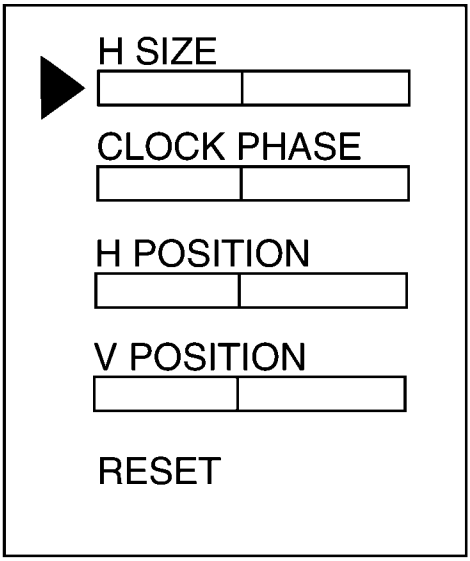
Be sure the on/off switch on the back right side of the StarGate is on (zero down).

Monitor Adjustments

INITIAL SETUP AND ADJUSTMENTS

The StarGate features pushbutton controls on the lower front of the display screen. For adjustments use the following controls to fine tune the image on the screen:





HIT SELECT & ADJUST WITH ^ v

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The StarGate can store screen settings for multiple resolutions, which is especially useful when it is used with a graphics card that supports a range of resolutions. The resolutions supported by the StarGate include:

- 1280 x 1024, SXVGA
- 1024 x 768, XGA
- 832 x 624, Mac
- 800 x 600, SVGA
- 640 x 480, VGA
- 720 x 400, VGA Tet
- 640 x 400, PC9801

TIPS AND TECHNIQUES

Graphics cards create a wide variety of screen resolutions. The StarGate needs to be "educated" to interact properly with your system's graphics card. Once the StarGate has been educated, the settings can be saved and the StarGate will not need to be adjusted again, unless the graphics cards are changed.

This section provides a thorough tutorial on adjusting the settings for the StarGate.

Unlike CRT's, flat panel displays do not require a high refresh rate for better display quality. In some cases, a high refresh rate may have a negative effect on display quality. If all display artifacts are not removed by the following procedure, try a lower vertical refresh rate setting on the computer system's graphics card.

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Monitor Adjustments

Step 1: Power Up

After the installation instructions have been followed:

- Turn on power to the computer/ workstation.
- Turn on power to the StarGate.

The StarGate will then:

- Illuminate the "Power" indicator on the front panel.
- Perform self tests.
- Search for and automatically determine the frequencies and sync type of the incoming video signals.
- Illuminate the "stby" indicator on the front panel while powering up and searching for proper sync signals.
- Extinguish the "Stby" indicator on the front panel after acquiring proper sync signals.
- Display the video image on the screen.

NOTE: A black band at the top and bottom of the display may be visible at certain resolutions. This is normal, as the expanded screen in some resolutions does not precisely fit the StarGate screen dimensions.

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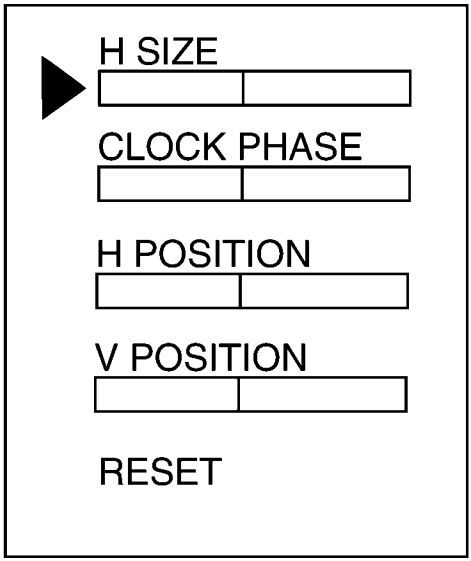
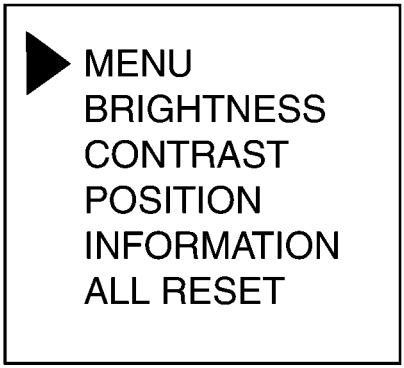
Monitor Adjustments



HIT SELECT & ADJUST WITH ^ v

HIGHLIGHT BY ^ v



HIT RESET
TO GO BACK
TO MAIN MENU

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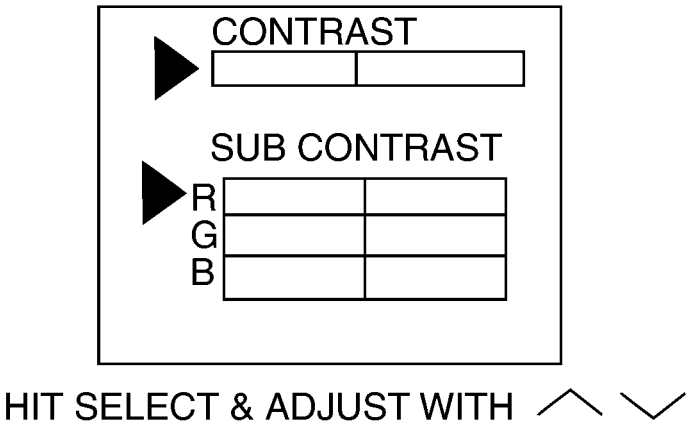

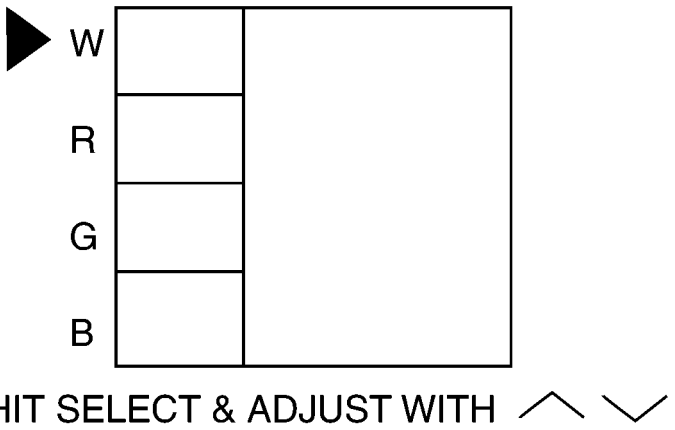

NOTE: See "Saving Settings" earlier in this manual for a complete discussion of this subject.

Step 7: Saving Adjustments

The screen settings will automatically be saved as long as the power is maintained for at least five seconds after the last adjustment.

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CLEAN FRONT PANEL

WARNING: Be sure to turn off the power before performing any maintenance on the StarGate

- Gently wipe the front panel of the StarGate with a soft cloth.
- Remove finger marks and grease with a damp cloth and mild detergent. DO NOT use solvents or abrasives.
- Never use flammable cleaning material to clean the front panel of the StarGate or other electrical apparatus.

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• Power light does not illuminate	• Check that power cable is properly connected to 110 vac power supply. • Check that front panel power switch is on. • Check that power switch on back of StarGate display is on.

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Specifications

DISPLAY	**SIZE**	**18 - inch**
	Display Type	AMLC
	Resolution	Up to 1280 x 1024 @ 60 Hz
	Pixel Configura	RGB Vertical Stripe
	Video Input	Analog RGB 0.7Vp-p/75 Ohm Pos.
	Separate sync	TTL level
	Horizontal sync	Positive/Negative
	Vertical sync	Positive/Negative
	Sync on Green	Video 0.3 Vp-p Negative
	Pixel Frequenc	Up to 135 MHz
	Color Palette	24-bits per color pixel; 16.7 million
	Contrast Ratio	230:1, typical
	Pixel Pitch	.2805 mm x .2805 mm
	Luminance	200 cd/m2 (typical)
	Diagonal Dim.	18.1"
	Horizontal	(359 mm)
	Vertical	(287.2 mm)
	Viewing Angle	+/-70º
	Control	H Pos, V Pos, Clock, H Wd, Pwr,
	Optical Resp. T	TR 10 TF 35 ms (typ)
POWER	**Power Consum**	60 W
	Power Supply	AC 90-240 V input @ 50/60Hz
	Current	1.0 A @ 100 - 120 V / 0.5 @ 220 -
CABLING	**Display Cable**	6' cable, HD15 (opt. 13W3 or BNC)
	Power Cable	6' cable, IEC
OPTIONS	**Touch Panel**	
	Protective Lens	Yes
PACKAGING	**Total Size**	15.75"H (9U) x 4"D x 19"W
	Total Weight	22 lbs.
ENVIRONMENTAL	**Operating Tem**	0º to + 40º C
	Non Operating	-25º to + 60º C
	Operating Hum	20 to 95% Non condensing
	Non Operating	5% to 95% Non condensing
	Shipping Humi	5% to 95%
	Non Operating	0 to 40,000 ft.
	Operating Altit	0 to 10,000 ft.
RELIABILITY	**(MTBF)**	10,000 hours
	Operating Life	10 years
	Maintainability	<20 minutes
REGULATORY	**Safety**	UL 1950
	EMI/RFI	FCC Class A

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WARRANTY

1 Year Extended Warranty

Extent of Limited Warranty

1. Z Microsystems, Inc. (Z Micro) warrants to the end-user that Z Micro products will be free from defects in materials and workmanship for a specified time after the date of purchase. The duration of this limited warranty is stated above. Certain additional conditions and limitations of Z Micro's warranty are stated in the User Guide. Those conditions and limitations include: For software products, the warranty applies only to the media upon which the product is recorded; and Z Micro does not warrant the operation of any product to be uninterrupted or error free.
2. Z Micro's limited warranty covers only those defects which arise as a result of normal use of the product, and do not apply to any: Improper or inadequate maintenance; Hardware add-in boards, software, or interfacing not supplied by Z Micro; Unauthorized modification or misuse; Operation outside the product's environmental specifications; or improper maintenance.
3. If Z Micro receives, during the applicable warranty period, notice of a defect in a hardware product which is covered by Z Micro's warranty, Z Micro shall either repair or replace the product, at its option. Any replacement product may be either new or like new, provided that it has functionality at least equal to that of the product being replaced.
4. If Z Micro is unable to repair or replace, as applicable, a defective product which is covered by Z Micro's warranty, Z Micro shall, within a reasonable time after being notified of the defect, refund the purchase price for the product, provided the product is returned.
5. This Limited Warranty Statement gives the customer specific legal rights. You may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world.

Limitations of Warranty

1. NEITHER Z MICRO NOR ANY OF ITS THIRD PARTY SUPPLIERS MAKES ANY OTHER WARRANTY OF ANY KIND, WHETHER Z MICRO AND ITS THIRD PART SUPPLIERS SPECIFICALLY DISCLAIM THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
2. To the extent that this Limited Warranty Statement is inconsistent with the law of the locality where the customer uses the Z Micro product, this Limited Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain limitations of this Limited Warranty Statement may not apply to the customer. For example, some states in the United States, as well as some governments outside the United States (including provinces in Canada), may: Preclude the disclaimers and limitations in this Warranty Statement from limiting the statutory rights of a

WARRANTY

consumer (for example, Australia and the United Kingdom); Otherwise restrict the ability of a manufacturer to make such disclaimers or impose such limitations; Grant the customer additional warranty rights, specify the duration of implied warranties which the manufacturer cannot disclaim, or not allow limitations on how long an implied warranty lasts.

3. To the extent allowed by local law, the remedies provided in this Warranty Statement are the customer's sole and exclusive remedies.

Limitations of Liability

1. EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THIS WARRANTY STATEMENT, IN NO EVENT SHALL Z MICRO BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY AND WHETHER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

FAQ'S --- FREQUENTLY ASKED QUESTIONS

What equipment is covered?

Schedule A attached to the warranty statement that comes with the equipment lists the equipment covered.

What failures are covered?

Any type of workmanship or equipment hardware failures arising from normal use of the equipment is covered. Excluded are for problems related to abuse, acts of god, or acts of war. Software problems are not covered.

Who do I call?

Telephone or fax the Customer Service Dept. at Z Microsystems: (858) 657-1000 x2 voice (858) 657-1001 fax Please have the equipment serial number and a description of the problem ready when you call. It is also handy to know the version of the operating system you are using.

How long does it take?

Your equipment should be returned to you within 30 days of its receipt at the factory. In many cases it will be less (our goal is to

WARRANTY

have your equipment on its way back within 5 days). However, if the damaged equipment has to be serviced by the original manufacturer (Seagate, NEC, for example), it may take longer.

Are there any extra costs?

The only per incident cost you will incur is Freight In to return the equipment to the factory. Your extended warranty covers all of the costs associated with the repair and the return shipment of the covered equipment.

What about classified data?

Do not send any data storage equipment that contains classified material. There are no provisions for handling classified material.

Appendix

Y2K COMPLIANCE

Z Microsystems has achieved full Y2K Compliance.

In late 1997, the company's senior management assigned a Y2K Project Team that consists of a cross-functional representation from information technology, procurement, manufacturing, test and development, finance, general affairs, engineering, marketing and facilities organizations to address the Year 2000 issues.

The Assessment/Rectification Phase of the Year 2000 efforts and full compliance for all mission critical internal systems were accomplished as scheduled by the end of Q1, 1999. Contingency development and validation of the company's overall Year 2000 readiness will continue through 1999.

The following strategically important categories have been assessed for Year 2000 readiness:

Suppliers and Service Providers Readiness.

All major strategic suppliers are assessed to be Year 2000 compliant.

Most of the company's service providers' compliance efforts will continue through 1999. Major concerns and efforts will be focused on the company's shipping companies in 1999.

Z Microsystems Internal Systems

All mission critical internal systems are determined to be fully Year 2000 Compliant. A few minor Year 2000 related issues need to be addressed in 1999.

Z Microsystems Products

All Z Microsystems products are in full compliance.

The company's MIS has taken the lead and worked with the Finance Department to develop comprehensive Year 2000 Contingency Plans for the company's mission critical application systems to assure the continuity of daily business.

FURTHER HELP

If you are unable to correct any problem yourself, contact:

Z Microsystems at:
(858) 657-1000
Fax: (858) 657-1001
Website: www.zmicro.com

Before calling, please have available as much of the following information as possible:

1. Model and serial number from the label on the monitor.
2. Purchase P.O.
3. Description of problem.
4. Computer type and model.
5. System configuration (hardware fitted, etc.).
6. System BIOS version number.
7. Operating System and version number.
8. Display driver version number.
9. Video Adapter type.

NOTE: *If possible, stay by the computer. The Z Microsystems Technical Support Representative may wish to go through the problem over the telephone.*

NOTE: *More help, late-breaking news and details of the latest accessories for these products may be found on the worldwide web at: http:// www.zmicro.com*

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REPLACING PARTS

If the Z Microsystems Technical Support Engineer determines that the product needs to be replaced, a Customer Service Representative will issue a Return Material Authorization (RMA) number and return address.

A RMA number is required to return a product to Z Microsystems, regardless of the reason for the return.

The following information is required when returning Z Microsystems products:

1. Model number
2. Serial number
3. Date of purchase
4. Proof of purchase (use the invoice or packing slip)
5. Customer ship-to address and any special shipping requirements
6. Specific and detailed description of the problem

PROVIDING FEEDBACK

We value your feedback on our products, their performance, any problems and constructive suggestions. Please send such productive information in writing to:

Customer Service

Z Microsystems 5945 Pacific Center Blvd., Suite 509 San Diego, CA 92121-4309

or www.zmicro.com

Z Microsystems, Inc.
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Website: www.zmicro.com
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